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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/849,181

05/20/2004

Masatsugu Yokote

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11/22/2006

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EXAMINER

LUM VANNUCCI, LEE SIN YEE

ART UNIT

PAPER NUMBER

3611

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/849,181

Applicant(s)

YOKOTE, MASATSUGU

Examiner

Lee Lum

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) remaining is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendments were filed 8/23/06 and 9/25/06, the former including new Claims 12-14.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The language "when the steering reaction force acts in a clockwise/counter-clockwise direction corresponding to a right/left direction" is not evident in the Spec, and thus constitutes new matter.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurishige et al 6736236 in view of Adler et al 5469928.

Kurishige discloses a steering apparatus for controlling left and right wheels of a vehicle comprising

- Steering wheel 1/101 (figs 24,1),
- Power steering device 10 (fig 24),
- Steering mechanism/rack-and-pinion system 8 (fig 24),
- Steering reaction force calculating section (exemplified in c7, ln 29-30; including determination of force "T-tran"),
- Steering force correcting section to correct the steering assistance force so as to compensate the steering reaction force (c7, ln 7-15).

The reference does not disclose individual driving means for the left and right drive wheels for varying torque to each wheel. Adler shows this configuration with

motors 8,9 driving wheels 4,6, controlled by control section/controller 18, in accordance with the steering angle/turning direction (c6, ln 6-10), including increasing torque to the outer wheel, and decreasing the torque to the inner wheel, during a turn,

or in accordance with a running condition of the vehicle (c3, ln 45-46),

wherein a difference between the driving forces is determined, as provided (at least) in c4, ln 9-10; "difference in driving torques".

It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this driving arrangement, as shown in Adler, so to provide the proper determination of steering assistance force as dependent (at least) on the steering angle, thus increase accuracy of the steering reaction system. It is extremely well-known to increase the driving force of the outer wheel, and decrease that of the inner wheel, during a turn.

Re **Claim 8**, the references disclose a process for controlling left and right wheels of a vehicle, the steps derived from the structure/means described above.

4. The prior art considered pertinent, but not relied upon, includes:
Shinmura 6497975.

5. **Claims 3 and 4** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art does not disclose the invention above further comprising, *inter alia*, the steering force correcting section as decreasing the steering assist force when the driving force section decreases the force of the outer drive wheel outside of a turning radius.

As best understood, Claims 12-14 are not rejected under prior art.

6. RESPONSE TO REMARKS

Examiner provides slightly modified rejections for some claims as necessitated by amendment. Upon reconsideration, new rejections are provided for Claims 2 and 5 previously indicated as allowable, and ***Examiner sincerely apologizes for the inconvenience.*** Kurishige in view of Adler obviates the respective limitations, where the latter teaches an extremely well-known drive configuration including individual motors for the drive wheels, and adjustment of torque to the wheels dependent (at least) on their direction.

Applicant is asked to note allowable subject matter.

7. Communication with the Examiner/USPTO

Any inquiry concerning this communication, or others, should be directed to Ms. Lum at 571 272 6649, M-F, 9-5. If she can't be reached, her supervisor, Ms. Lesley Morris, may be reached at 571 272 6651. Our fax number is 571 273 8300.

Information re the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) System as follows: for unpublished apps - private PAIR only, for published apps - private or public PAIR. For more info on PAIR - <http://pair-direct.uspto.gov>. For more info on private PAIR - call the Electronic Business Center at 866 217 9197.

Ms. Lee Lum-Vannucci
Examiner
11/7/06

